REMARKS

Claim 1 and claims 4-9 are pending in the subject application. Claims 1, 4, 6-9 have been rejected under 35 U.S.C. 103(a). Claim 5 is objected to but otherwise allowable. Claims 11 and 12 have been newly added. Accordingly, after entry of this amendment, the pending claims will be claim 1 and claims 4-9, 11, and 12.

The Applicants appreciate the Examiner's thorough examination of the subject application and respectfully request reconsideration of the subject application based on the following remarks.

35 U.S.C. § 103(a) REJECTION

The Examiner has rejected claims 1, 4, 8, and 9 under 35 USC 103(a) as unpatentable over Japanese Laid Open Patent Application Publication Number 10-333121 to Miyazaki, et al. ("Miyazaki" or the "Miyazaki Reference") in view of the Liquid Crystal Device Handbook of the 142nd Committee of Japan Society for the Promotion of Science (the "Handbook"); claim 7 under 35 USC 103(a) as unpatentable over Miyazaki and the Handbook, further in view of U.S. Patent Number 5,880,801 to Scherer, et al. ("Scherer" or the "Scherer Reference"); and claim 6 under 35 USC 103(a) as unpatentable over Miyazaki and the Handbook, further in view of Japanese Published Laid-Open Patent Application JP 06-102485A ("Okada" or the "Okada Reference") The Applicants respectfully traverse these rejections for the reasons provide below.

The Examiner asserts that, the Miyazaki reference "does not necessarily teach" the limitation that the thickness of the liquid crystal layer "d" satisfies the equation $1 < d/P < 15$, but that it would have been obvious to include this limitation in view of the Handbook. The Applicants disagree and respectfully maintain that the Examiner has not made a *prima facie* case of obviousness. More specifically, not only does

Miyazaki not teach the limitation, Miyazaki expressly teaches away from the limitation range. Indeed, referring to Miyazaki Section 0016, Miyazaki teaches that the d/P ratio in all cases is less than unity (1). Therefore, Miyazaki would not have suggested to or motivated one of ordinary skill in the art to use a d/P ratio in excess of unity and the obviousness rejection is inappropriate.

Similarly, FIG. 5.47 of the Handbook merely provides a relationship between voltage and transmissivity for a single d/P case that is greater than 2. There is nothing to suggest that V_{thFmax} denotes the first threshold voltage for transitioning the liquid crystal layer included in a region with a largest thickness d of the liquid crystal layer or that V_{thHmin} denotes a second threshold voltage for transitioning the liquid crystal layer included in a region with a smallest thickness d of the liquid crystal layer as recited in claim 1. The Handbook is completely silent about threshold voltages for the two regions.

Furthermore, Miyazaki does not teach, mention or suggest that V_{thFmax} denotes a first threshold voltage for transitioning the liquid crystal layer included in a region with a largest thickness d of the liquid crystal layer or that V_{thHmin} denotes a second threshold voltage for transitioning the liquid crystal layer included in a region with a smallest thickness d of the liquid crystal layer as recited in claim 1. Miyazaki is completely silent about threshold voltages for the two regions.

Moreover, Miyazaki discloses a Frederick's transition in which liquid crystal molecules in the liquid crystal layer are put into a first metastable state, i.e., a homeotropic state, when a predetermined voltage is applied to the LC layer. When a second voltage is applied to the LC layer as a next step, the LC molecules in the LC layer are put into a second metastable state, i.e., a state in which the LC molecules are twisted with a twist angle of 180 degrees.

In contrast, when a voltage is applied across the LC layer, the present

invention discloses transitioning from a planar state, in which the helical axis is perpendicular to the substrate, to a focal conic state, in which the helical axis orientation is random (or substantially parallel) with respect to the substrate. Hence, Miyazaki does not teach a necessary part of claim 1.

The Examiner also asserts that, with respect to the claim feature of a liquid crystal layer having "at least two regions having different values of a first threshold voltage for transitioning the liquid crystal layer from the planar state to the focal conic state", it "is inherent in the variable thickness because the transition is due to the existence of a local critical electric field while the electric field is directly proportional to the ratio of voltage divided by distance". The present invention defines the liquid crystal layer thicknesses based on the first and second threshold voltages, which is not taught, mentioned or suggested by any of the cited references.

With respect to claims 6 and 7, neither the Okada nor the Sherer references, respectively, can make up for the deficiencies of the Miyazaki reference and the Handbook.

Accordingly, the Applicants assert that the claims are not made obvious by the cited references and, further, satisfy the requirements of 35 U.S.C. 100 et seq., especially § 103(a). As such, the Applicants believe that the claims are allowable. Moreover, it is respectfully submitted that the subject application is in condition for allowance. Early and favorable action is requested.

The Applicants believe that no additional fee is required for consideration of the within Response. However, if for any reason the fee paid is inadequate or credit is owed for any excess fee paid, you are hereby authorized and requested to charge Deposit Account No. **04-1105**.

Respectfully submitted,

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